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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,647	02/27/2004	Dipl.-Ing. Karl Schrodinger	16274.180	9146

22913 7590 09/12/2006

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EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/789,647	<b>Applicant(s)</b> SCHRODINGER, DIPL.-ING. KARL	
	<b>Examiner</b> Tuan N. Nguyen	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10 and 12-20 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

2. Claims 1-3, 7-10, 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp (US 6,991,381).

With respect to claim 1 Kropp (US 6,991,381) shows and discloses an optoelectronic arrangement (Title, Abstract), comprising at least one emission component (*Fig 5, 6: #1 laser diode*), a monitor component, which is operatively coupled to the emission component and detects at least some radiation radiated by the emission component (*Fig 5,6: #2 photodiode receiving some radiation from laser #1*), a driver circuit electrically connected to the emission component and the monitor component (*Fig 5,6: #6 printed circuit board and #51-54 electric connect wiring connecting to the laser and photodiode*)(*Col 7: 20-55*) , and a carrier substrate (*Fig 5,6: #3, #4, #14 carrier substrate for the photodiode and laser*) and the emission component being formed as a

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separate structural part and being arranged on the carrier substrate (Fig 5,6: #1 laser on carrier substrate #3 which is separate structure from the #2 photodiode monitor & #4 substrate, and #6 printed circuit & #14 substrate). Kropp '381 reference lacks the driver circuit being formed as a circuit integrated into the carrier substrate, the monitor component likewise being integrated into the same carrier substrate. However, Kropp'381 reference does show *printed circuit #6 on substrate #14, while photodiode on substrate #4 (Fig 5,6), and further discloses in Col 4: 45-55 that the substrate of the detection device and laser can be same the same material such as silicon or sapphire*. It has been held, that rearranging parts of an invention involves only routine skill in the art, since such modification would have involved a mere change in the size of a component or its compactness such as to reduce cost in making multiple components. In re Japikse, 86 USPQ 70.

With respect to claims 2, 3 Fig 5,6: shows the laser #1 fixed above the monitor #2, with part of laser radiated upward and part down ward to the photodiode (Col 2: 1-7 emission from both side). It is inherent that the photodiode having a pn (*positive and negative power connection for operation*) junction integrated into the carrier substrate.

With respect to claims 7, 8 Fig 5, 6: *shows the emission component laser chip#1, and the emission component being connected to the carrier substrate by at least one of adhesive bonding and wire bonding (Col 8:25-30, 55-60 bonding wires contacts with laser diode and soldering or potting compound).*

With respect to claim 9, (*Col 1: 36-40*) discloses the use of flip-chip mounting for vertical circuit.

With respect to claims 10, 12 the claims further requires an array of vertically emitting laser components and respectively assigned monitor components, wherein at least some of the laser light from the respective laser components is radiated upward and some of the laser light is radiated downward onto the associated monitor components. It is well-known to have plurality of lasers formed in a array for the advantages benefit of increasing the output power, for example useful in laser printer applications. It has been held that mere duplication of the essential working part of a device involves only routine skill in the art, in this case the array being connected as redundant components. *St. Regis Paper Co. v. Bemis Co.* , 193 USPQ 8.

With respect to claim 13, (*Col 1: 54-60*) discloses the carrier substrate being transparent to the radiated light.

With respect to claims 14, 15, 16 (*Col 4: 13-15*) discloses emission component is a VCSEL comprises GaAs and emitting light having a wavelength of between 650 and 850 nm (*Col 6: 13-15 VCSEL GaAs laser diode*)(*Col 4: 44-46 – wavelength 850nm*).

With respect to claims 17, 18, 19 the claim further require the driver circuit and photodiode monitor component is integrated monolithically into the carrier substrate. *Kropp '381 discloses in Col 4: 45-55 that the substrate of the detection device and laser can have the same silicon or sapphire substrate and the like. It is within one skill in the art to recognize that the detection device and circuit can be co-exist in the same substrate and having the drive circuit and monitor component integrated into the same carrier substrate is within one skill in the art, to reduce components and or for compactness.*

With respect to claim 20, Figure 5,6 shows the laser chip emission component integrated monolithically into the carrier substrate (Fig 5,6: #3 substrate), and the laser

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chip being located on the carrier substrate above the diode (*Fig 5,6: laser #1 on substrate #3, which above the photodiode #2*).

***Allowable Subject Matter***

3. Claims 4, 5, <sup>6,</sup> 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest:

**Claim 4:**

a laser resonator being arranged at a side of the laser component which is remote from the carrier substrate, and the laser substrate having, at a side facing the carrier substrate and in a manner adjoining the laser resonator, a cutout in such a way that downwardly radiated light falls onto the monitor component.

**Claim 5:**

a laser resonator being arranged at a side of the laser component which faces the carrier substrate, and the laser substrate having, at a side remote from the carrier substrate and in a manner adjoining the laser resonator, a cutout that facilitates radiating light away from the carrier substrate.

**Claim 11:**

An array of vertical emitting laser having a common substrate and respective laser resonators arranged respective sides of the laser components that face the carrier substrate, where the respective laser substrates for the laser components at a side remote from the carrier substrate and in a manner adjoining the laser resonators, with respective cutouts that facilitate radiating light away from the carrier substrate.

**Response to Arguments/Remarks**

4. Applicant's arguments filed on 06/22/2006 have been fully considered but they are not persuasive.

On page 6, lines 4-6 Applicant argued “ *Kropp fails to teach the claim 1 limitation ‘the driver circuit being formed as a circuit integrated into the carrier substrate, [and] the monitor component likewise being integrated into the carrier substrate.’* ” Furthermore, on page 6, lines 30-33 Applicant argued “*the Examiner has not established the existence of a suggestion or motivation ...*” The Applicant continue on page 7, lines 20-23 requesting affidavit or pointing out “*...detection device and circuit can co-exist in the same substrate...*” and “*... plurality of lasers formed in array for the benefit of increasing the power output, ...*”

The examiner stands, that the Applicant did pointing out examiner's rejection on page 6, lines 5-15 “Kropp does shows printed circuit #6 on substrate #14, while photodiode on substrate #14....mounted on a similar material” with suggestion or motivation “rearranging parts of an invention involves only routine skill in the art, since such modification would change the size of a component/compactness such as reduce cost...”. The examiner did provide the motivation and suggestion. Applicant's argument can be further shown by Patents VanZegbroeck (US 5,600,130), Jewell et al. (US 5,500,540) and Horio et al. (US –6,590,152) - having a driver circuit and its detector on the same substrate, and being in an array to increase output are common knowledge in the art. The claims do not possess any distinct feature or inventiveness. The examiner read

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the claims given their broadest reasonable interpretation consistent with the specification. However, it is not proper to read limitations appearing in the specification into the claim when these limitations are not recited in the claim.

### ***Conclusion***

5. The prior art made of record and relied upon is considered pertinent to applicant's discloses.

**VanZeghbroech (US 5,600,130)** - *(ABSTRACT – optoelectronic array and conventional integrated circuitry contained on the same wafer/substrate ...)*

**Jewell et al. (US 5,500,540)** – *(ABSTRACT – multiple chip optoelectronic to be integrated on the same face as the electronic devices...)*

**Horio et al. (US 6,590,152)** – *(ABSTRACT and shows - driver circuit [and] the monitor component likewise being integrated into the same carrier/substrate.)*

6. According to MPEP 2122.03 the examiner has provided the reason and supported reference only as directly corresponding evidence to support the common knowledge. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Communication Information***

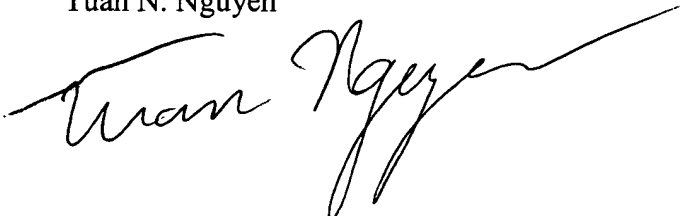
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARMANDO RODRIGUEZ  
PRIMARY EXAMINER

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long, sweeping horizontal stroke extending to the right.